

AMENDMENT

In the claims:

Pursuant to 37 C.F.R. §1.121 the following is a complete listing of the claims of the present application:

1-55. (canceled).

56. (New) A method of identifying a modulator of an activity of a GPCR-like receptor comprising the following steps:

- (a) contacting a test compound with a composition, wherein said composition comprises an invertebrate GPCR-like receptor polypeptide encoded by a polynucleotide having a sequence that is at least 98% identical to the sequence selected from the group consisting of SEQ ID NOS:104 and 106; and
- (b) measuring the activity of said GPCR-like receptor in the presence and absence of said test compound wherein if the test compound alters a GPCE-like receptor activity, the test compound is identified as a modulator.

57. (New) The method according to claim 56 wherein the activity of said GPCR-like receptor is the binding of a ligand.

58. (New) The method according to claim 56 wherein the activity of said GPCR-like receptor is the propagation of a transmembrane signal.

59. (New) The method according to claim 56 wherein said method is selected from the group consisting of an ion flux assay, a yeast growth assay, a non-hydrolyzable GTP assay, a cAMP assay, an inositol triphosphate assay, and a diacylglycerol assay.

60. (New) The method according to claim 56 wherein said modulator is an inhibitor of said GPCR-like receptor activity.

61. (New) The method according to claim 56 wherein said composition further comprises a G-protein.

62. (New) The method according to claim 61 wherein said G-protein is selected from the group consisting of $G_{\alpha 16}$, $G_{\alpha 15}$, $G_{q\alpha 5}$, G_{qs5} , $G_{q\alpha 5}$, and G_{q25} .

63. (New) The method according to claim 56 wherein said composition further comprises a peptide that binds to said GPCR-like receptor.

64. (New) The method according to claim 63 wherein said peptide is attached to a label.

65. (New) The method according to claim 64 wherein said label is selected from the group consisting of a fluorescence label, a radioactive label, a chemiluminescence label, an enzymic label and an immunogenic label.

66. (New) A method of identifying a candidate anti-invertebrate modulator comprising the steps of:

(a) contacting a test compound with a composition, wherein said composition comprises an invertebrate GPCR-like receptor polypeptide encoded by a polynucleotide having a sequence that is at least 98% identical to the sequence selected from the group consisting of SEQ ID NOS:104 and 106; and

(b) identifying a test compound that binds to or interacts with said composition as a candidate anti-invertebrate modulator.

67. (New) The method according to claim 66 wherein the polynucleotide encoding said GPCR-like receptor comprises the sequence of SEQ ID NO:104.

68. (New) An isolated GPCR-like receptor consisting of the amino acid sequence selected from the group consisting of SEQ ID NOS:105 and 107.

69. (New) An isolated polynucleotide encoding a GPCR-like receptor wherein the polynucleotide comprises a sequence that is at least 98% identical to a sequence selected from the group consisting of SEQ ID NOS:104 and 106.

70. (New) The polynucleotide according to claim 69 wherein said polynucleotide comprises a sequence set forth in SEQ ID NO:104.

71. (New) A non-native host cell transformed or transfected with the polynucleotide according to claim 69.

72. (New) A vector comprising the polynucleotide according to claim 69.

73. (New) The vector according to claim 70 wherein said vector is an expression vector and said polynucleotide is operably linked to a polynucleotide comprising an expression control sequence.

74. (New) A host cell transformed or transfected with the expression vector according to claim 73.

75. (New) The host cell according to claim 74 wherein said host cell is selected from the group consisting of mammalian cells, insect cells, yeast cells, helminthic cells, and bacterial cells.

76. (New) The host cell according to claim 75 herein said host cell is selected from the group consisting of a COS cell, a CHO cell, an HEK293 cell, a Drosophila S2 cell, an insect Sf9 cell, an insect High-5 cell, and an *Escherichia coli* cell.